U.S. Department of the Interior
Bureau of Land Management
White River Field Office
73544 Hwy 64
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2006-172-EA

CASEFILE/PROJECT NUMBER:

COD-052141 Piceance Creek Unit (PCU) 296-7A1-7A3, PCU 296-7A9),
COD-052127 (PCU 296-7A4),
COD-052129 (PCU 296-7A5-7A6, PCU 296-7A8),
COD-052131 (PCU 296-7A7)

PROJECT NAME: APDs for nine (9) wells-PCU 296-7A1 thru 7A9

LEGAL DESCRIPTION: Surface Location: T2S, R96W, SENE sec.7, 6th P.M.
Production Zone Locations:
PCU 296-7A1 (NESE sec.7
PCU 296-7A2 (SENE sec.7
PCU 296-7A3 (SENE sec.7
PCU 296-7A4 (NWNE sec.7
PCU 296-7A5 (SWNE sec.7
PCU 296-7A6 (SWNE sec.7
PCU 296-7A7 (SENW sec.7
PCU 296-7A8 (NWNE sec.7
PCU 296-7A9 (NENE sec.7

APPLICANT: ExxonMobil Oil Corporation

ISSUES AND CONCERNS (optional): On-site conducted on 06/21/05 and original well # was 6-48. Drilling plan scheduled for 12/14/2006 through 1/14/2008.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Proposed Action: The applicant proposes to drill nine (9) wells from the same well pad. Approx. 150' of new access road would be required. Access road ROW would be 40' for approximately 0.14 acres of new surface disturbance. The well pad size would be approximately 490'x 450' (5.0 ac.) with a production pad 200'x 80' (0.37 ac) for a total surface disturbance of approx. 5.51 acres. A new steel 6" gas pipeline 50'x 50' ROW (0.06 ac.) would be buried leaving the production pad to a tie in point with existing pipeline. Total acres for this well pad, access road and pipeline would be approximately 7 acres (includes cut/fill slopes).

- The maximum grade of the access road would not exceed 5%.
- Turnouts would be required for the access roads as needed.
- CMPs would be placed as needed.
- Surfacing material will be hauled over existing roads from a source not yet identified.
- No cattleguards will be required.
- The proposed access road would be flagged prior to construction.
- Water would either be piped with surface lines or trucked over access road. Remaining clear water would be pumped or hauled forward from previous wells after surface casing is set.
- Location sub-grade will be constructed by normal cut and fill methods.
- Surfacing material would be trucked to the location from an outside source and placed as needed.
- Drill cuttings would be disposed of in the reserve or dry cutting pit and buried with at least 4' of cover. E & P waste would be handled as defined, prescribed or permitted by the COGCC Rules.
- Any drilling mud with greater than 1% diesel net weight would be hauled to a proper disposal site.
- An alternative to hauling would be solidification in the pit with method approved by the Colorado Oil and Gas Conservation Commission (COGCC).
- All mud cuttings will meet these requirements before being buried or removed from the location.
- All cuttings will have all harmful properties of the waste reduced or removed and the mobility of leachate constituents reduced or eliminated.
- The BLM will be contacted prior to testing the cuttings of the first well so that the BLM may witness the testing procedures.
- Trash, waste paper, and other garbage would be contained in a fenced trash cage and hauled to a commercial disposal site.
- Salts that are not used in the drilling fluid would be removed from the location by the supplier.
- Sewage from the trailer houses will be disposed of in a manner meeting the Rio Blanco County Regulations, as under the guidance of Colorado Water Quality Control Commission, Department of Public Health and Environment.
- Portable, self-contained chemical toilets will be provided for human waste disposal. Upon completion and as needed the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility.
- Chemicals that are not used in the drilling and completion of the well would be removed from the location by the supplier.
- Drilling fluids would be allowed to evaporate in the reserve pit until the pit is dry enough for back filling.
- Water produced during tests would be disposed of in the reserve pit as per Onshore Order #7.
- Oil produced during tests would be stored in test tanks until sold, at which time it would be hauled from the site.

- In the event fluids in the pit do not evaporate in a reasonable time, the fluids would be hauled to a state approved disposal site or would be mechanically evaporated.
- The reserve pit would be fenced on three sides with 4 strand barbed wire during drilling and on the fourth side after the rig is released.
- No camps, airstrips, etc. would be constructed.
- All equipment and vehicles will be confined to the access road and well pad.
- Mud pits in the active circulation system would be steel pits. The reserve pit may be lined with an impermeable liner if needed to hold fluid.
- If snow is encountered, the snow would be removed before construction begins or the topsoil is disturbed, and placed downhill of the proposed topsoil stockpile.
- All available topsoil would be stripped on well locations and access roads, prior to construction, and stockpiled for use in reclamation of the site. Topsoil stockpile would be clearly segregated from any spoil pile and placed where it can be easily retrieved without impact to natural features.
- Upon completion of the operation and disposal of trash and debris as prescribed above, pits would be backfilled and recontoured as soon as practical after they have dried.
- Unneeded disturbed surfaces remaining after completion to the surface production facilities would be shaped to match the surrounding terrain and seeded as specified by the BLM.
- When the well is abandoned, ExxonMobil would rehabilitate the road and location as per BLM specifications.
- Revegetation of the drill pad would comply with BLM specifications.
- Rehabilitation operations would start in a timely manner following the completion of operations, typically the following construction season.
- An archaeological investigation and report will be prepared for the proposed access road and well site by Archaeological-Environmental Research Corporation and submitted to the BLM.

Completed wells on this pad will continue to produce during drilling operations per Exxon Mobil Simultaneous Operations guidelines.

Approximate date proposed action work would start would be 12/14/2006 thru 01/14/2008 for location PCU 296-7A.

No Action Alternative: Proposed action would not be approved and no construction or drilling would take place and no environmental impacts would occur.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: None

NEED FOR THE ACTION: To respond to the request by the applicant to exercise lease rights to construct access road, well pad, and install pipelines to develop hydrocarbon reserves.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Page 2-5

Decision Language: "Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values."

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: The entire White River Resource area has been classified as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II. The proposed action is not located within a ten mile radius of any special designation air sheds or non-attainment areas. The air quality criteria pollutant likely to be most affected by the proposed actions is the level of inhalable particulate matter, specifically particles ten microns or less in diameter (PM_{10}) associated with fugitive dust. In addition, slight increases in the following criteria pollutants: carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, and sulfur dioxide may also occur during construction due to the combustion of fossil fuels associated with construction operations. Also, non-criteria pollutants such as visibility, nitric oxide, air toxics (e.g. benzene) and total suspended particulates (TSP) may also experience slight short term increases as a result of the proposed actions (no national ambient air quality standards have been set for non-criteria pollutants). Unfortunately, no monitoring data is available for the survey area. However, it is apparent that current air quality near the proposed location is good because only one location on the western slope (Grand Junction, CO) is monitoring for criteria pollutants other than PM_{10}. Furthermore, the Colorado Air Pollution Control Division (APCD) estimates the maximum PM_{10} levels (24-hour average) in rural portions of western Colorado like the Piceance Basin to be near 50 micrograms per cubic meter ($\mu g/m^3$). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM_{10} (24-hour average) of 150 $\mu g/m^3$.

Environmental Consequences of the Proposed Action: Cumulative impacts detrimental to air quality in the Piceance Creek Basin can be expected as carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, particulate matter, and sulfur dioxide levels are elevated due to increased oil and gas development. Construction equipment producing elemental and organic carbon via fuel combustion combined with surface disturbing activities that leave soils exposed to eolian processes will both increase production of particulate matter (PM_{10}) during construction. Elemental and organic carbon existing in the air as PM_{10} can reduce visibility and increase the potential of respiratory health problems to exposed parties. However, following initial construction, suggested mitigation, and successful interim reclamation, criteria pollutant levels should return to near pre-construction levels.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust) from associated access roads, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing access roads with gravels will also help mitigate production of fugitive particulate matter. Land clearing, grading, earth moving or excavation activities will be suspended when wind speeds exceed a sustained velocity of 20 miles per hour. Disturbed areas will be restored to original contours, and revegetated with a BLM preferred seed mixture. Following seeding, woody debris cleared from the ROW will be pulled back over the pipeline to increase effective ground cover and help retain soil moisture.

Construction equipment will be maintained in good operating condition to ensure that engines are running efficiently. Vehicles and construction equipment with emission controls will also be maintained to ensure effective pollutant emission reductions.

CULTURAL RESOURCES

Affected Environment: The proposed PCU 296-7 well pad location, access road and well tie pipeline: The proposed well pad location, access road and well tie pipeline appear to fall within a twenty acre block that has been inventoried at the Class III (100% pedestrian) level (Brogan and Metcalf 2005, Compliance Dated 12/09/2005). No new cultural resources were identified in the inventoried area and no cultural resources are known within 308 meters of the well pad center stake.

Environmental Consequences of the Proposed Action: Construction of the proposed PCU 296-7 well pad, access road and well tie pipeline will not impact any known cultural resources.

Environmental Consequences of the No Action Alternative: There would be no new impacts to cultural resources under the No Action Alternative.

Mitigation: 1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Noxious weeds known to occur in the project area include houndstongue (*Cynoglossum officinale*), mullein (*Verbascum thapsus*), Russian, spotted and diffuse knapweeds (*Centaurea sp*), bull thistle (Cirsium vulgare), yellow toadflax (*Linaria vulgaris*) and black henbane (*Hyoscyamus niger*). The invasive alien annual cheatgrass occurs throughout the project area in association with unrevegetated earthen disturbance along roads, wells, and pipelines. The Magnolia area is a veritable hot bed for noxious weed infestations due primarily to the continuous earthen disturbance which has and continues to occur there.

Environmental Consequences of the Proposed Action: The proposed action will create about 7 acres of new earthen disturbance, which if it is not revegetated with desirable species and /or treated with herbicides to eradicate noxious weeds/ cheatgrass, will be invaded and dominated by noxious weeds/cheatgrass, increasing the potential for fire and the consequent further proliferation of cheatgrass. Noxious weeds could also spread from the project site to surrounding native rangelands resulting in a long term negative impact. The resulting

proliferation of noxious weeds/cheatgrass will perpetuate a downward cycle of environmental degradation that will be largely irreversible. The will be a low likelihood of long term negative impact if the proposed mitigation is properly implemented.

Environmental Consequences of the No Action Alternative: There will be no change from the present situation.

Mitigation: The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

MIGRATORY BIRDS

Affected Environment: The project area is largely encompassed by Wyoming big sagebrush with low densities of snowberry scattered throughout. Young pinyon-juniper has begun to encroach on the area. Several species of migratory birds fulfill nesting requirements in these communities from late May through mid July including blue-gray gnatcatcher and Vesper's sparrow. Bird populations associated with these communities that have a higher conservation interest (i.e., Rocky Mountain Bird Observatory, Partners in Flight program) are limited to Brewer's sparrow and green-tailed towhee. There are no specialized or narrowly endemic species known to occupy the project area.

Environmental Consequences of the Proposed Action: Construction of pad 296-7A1-A9 is schedule to begin in mid-December and would have no potential to directly impact migratory bird nesting functions. Although drilling procedures may extend into the following spring and summer, nest initiation would have been made in the face of ongoing drilling activities. Development of this site will result in the loss of approximately seven acres of Wyoming big sagebrush habitat which could potentially displace up to six pairs of higher conservation interest species.

The Piceance Creek valley is used by waterfowl and other migratory birds throughout the year. The development of reserve pits that contain fluids have attracted waterfowl use, particularly during the migratory period (i.e., local records: mid-March through late May; mid-October through late November) and likely have similar attraction for migratory and resident passerines. There have been several recent instances of migratory waterfowl having contacted drilling or frac fluids stored in reserve pits during or after completion operations and are suffering mortality in violation of the Migratory Bird Treaty Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be conservative and relegated to preventing bird contact with fluids that may pose a problem.

Environmental Consequences of the No Action Alternative: There would be no conceivable influence on migratory birds under the no action alternative.

Mitigation: It is recommended that earthwork associated with this project be conducted outside the migratory bird nesting season (late-May through mid-July).

See discussion in Terrestrial Wildlife regarding interim reclamation.

It will be the responsibility of the operator to effectively preclude migratory bird access to, or contact with, reserve pit contents that possess toxic properties (i.e., through ingestion or exposure) or have potential to compromise the water-repellent properties of birds' plumage. Exclusion methods may include netting, the use of "bird-balls", or other alternative methods that effectively eliminate migratory bird contact with pit contents and meet BLM's approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to eliminate migratory bird use two weeks prior to initiation of drilling activities. The BLM-approved method will be applied whenever such pits contain fluids other than fresh water. All lethal and non-lethal events that involve migratory birds will be reported to a White River Field Office Petroleum Engineer Technician immediately.

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

Affected Environment: There are no threatened or endangered animal species that derive important use or benefit from the project area. The project area is considered habitat for the greater sage-grouse, a BLM-sensitive and State Species of Special Concern.

The project area is broadly encompassed by Wyoming big sagebrush with snowberry, serviceberry and young pinyon-juniper scattered throughout. The understory is comprised of native perennial grasses and forbs. Sage-grouse habitat in the Piceance Basin is naturally fragmented, with suitable habitat occurring along ridge tops. These sage dominated ridge tops which contain a strong herbaceous understory are considered suitable nesting and brood-rearing habitat.

The site is isolated from currently occupied habitat by approximately one mile. According to Colorado Division of Wildlife, the project area is presently unoccupied, however the area holds potential for future recolonization.

Environmental Consequences of the Proposed Action: Long-term clearing and industrial occupation of sagebrush habitats ultimately suitable for sage-grouse would be relatively small in extent and located along an existing road corridor. Construction of this pad would result in the loss of approximately seven acres of sagebrush communities. This constitutes an incremental reduction in the effective extent of suitable sagebrush habitats available for sage-grouse recovery. As mitigated, the continuity and integrity of the sagebrush park for near-term reoccupation by sage-grouse would not be substantially altered.

Environmental Consequences of the No Action Alternative: The no action alternative would have no conceivable influence on special status animals or associated habitat.

Mitigation: Disturbed areas would be seeded with a mix designed to reestablish sagebrush and forb species.

Sagebrush seed would be collected from local populations of appropriate species. Distribution would be dependent upon range site (i.e., *Artemisia tridentata* spp. *Vaseyana* and spp. *wyomingensis*). A mosaic of sagebrush seeded and unseeded areas are recommended. Reclamation on these sites should use seed mixes and seeding methods that include and promote successful establishment of a full complement of grasses and favored native forbs. The following forbs would be included in reclamation seed mixes as appropriate throughout sage-grouse range on lands administered by the BLM WRFO and it is recommended that these components be applied to fee-lands under ExxonMobil's control or lease: 1) scarlet globemallow, 2) Utah sweetvetch, 3) arrowleaf balsamroot, 4) Lewis flax, and 5) Rocky Mountain penstemon. (See sage-grouse seed mixes in Vegetation.)

Additional vegetation treatment to enhance sage-grouse habitat would be negotiated between the BLM, CDOW, and ExxonMobil.

Long-term modification of suitable sage-grouse habitat would be minimized through the use of interim reclamation as directed by BLM.

Finding on the Public Land Health Standard for Threatened & Endangered species: The project is within the overall range for sage-grouse and suitable habitat would be removed by construction of the well pad. That removal would be largely mitigated by the reclamation measures described above. The standard with regard to the greater sage-grouse is expected to be satisfied by mitigation for grouse or grouse habitat to be developed by BLM and the Colorado Division of Wildlife.

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.

Environmental Consequences of the Proposed Action: No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

Environmental Consequences of the No Action Alternative: No hazardous or other solid wastes would be generated under the no-action alternative.

Mitigation: The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: The proposed action is located in the Lower Piceance Creek (~25acres) fifth level watershed. The proposed well pad location #PCU 297-7A is located in the Hannahan Gulch watershed. The Hannahan Gulch watershed is situated in stream segment 16 of the White River Basin. Hannahan Gulch is an ephemeral tributary to Hatch Gulch which is an ephemeral tributary to Piceance Creek. Piceance Creek is a perennial tributary to the White River. The White River is a tributary to the Green River (in Utah) which is a tributary to the Colorado River.

The "Status of Water Quality in Colorado –2006" (CDPHE 2006b) and Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a) were reviewed for information relating to drainages within the project area.
Stream segment 16 of the White River Basin is defined as all tributaries to Piceance Creek, including all wetlands, lakes and reservoirs, from the source to the confluence with the White River, except for the specific listings in segments 17, 19, and 20. The State has classified stream segment 16 of the White River Basin as "Use Protected" and further designated as beneficial for the following uses: Warm Aquatic Life 2, Recreation 2, and Agriculture. The antidegradation review requirements in the Antidegradation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. For this reach, minimum standards for three parameters have been listed. These parameters are: dissolved oxygen = 5.0 milligrams per liter (mg/l), pH = 6.5 - 9.0, and Fecal Coliform = 2,000/100 milliliters (ml) and 630/100 ml E. coli. Numeric standards for inorganic compounds and metals can be found within Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a).

Newly promulgated Colorado Regulations Nos. 93 and 94 (CDPHE 2006c and 2006d, respectively) were reviewed for information related to the proposed project area drainages. Regulation No. 93 is the State's Section 303(d) list of water-quality-limited segments requiring Total Maximum Daily Loads (TMDLs). The 2006 303(d) list of segments needing development of TMDLs includes two segments within the White River - segment 9b, White River tributaries North and South Forks to Piceance Creek, specifically the Flag Creek portion (for impairment from selenium with a low priority for TMDL development) and segment 22, tributaries to the White River, Douglas Creek to the Colorado/Utah boarder, specifically West Evacuation Wash, and Douglas Creek (sediment impairments). Regulation 94 is the State's list of water bodies identified for monitoring and evaluation, to assess water quality and determine if a need for TMDLs exists. The list includes two White River segments that are potentially impaired – 9 (Flag Creek) and 22 (Soldier Creek). Stream segment 16 was not listed.

Ground Water: Surface geologic formation at proposed location is Tertiary in age (Uinta Formation) and consists primarily of interbedded sandstone and siltstone. A review of the US Geological Survey Ground Water Atlas of the United States (Topper et al., 2003) was done to assess ground water resources at the location of the proposed action. The proposed action is

located in the Piceance Creek structural basin. Primary bedrock aquifers within the Piceance Basin are listed in table 1.

Table 1:

Summary of Hydrogeologic Units						
Hydrogeologic Unit	**Stratigraphic Unit**	**Physical Description**	**Thickness**	**Hydraulic Conductivity**	**Yield**	**TDS**
			(ft)	**(ft/day)**	**(gpm)**	**mg/L**
Upper Piceance Basin aquifer	Uinta Formation	sandstone, fractured siltstone, fractured marlstone	0 – 1,400	<0.2 to >1.6	1- 900	500-1,000
Mahogany confining unit	Green River Formation	dolomitic marlstone and shale	500-1,800	<0.01	<25	NL
Lower Piceance Basin aquifer	Green River Formation	shale, fine-grained sandstone, fractured marlstone	0 – 1,870	<0.1 to >1.2	1-1,000	1,000-10,000
Basal confining unit	Green River Formation, Wasatch Formation	claystone, siltstone, clay rich oil shale, marlstone, channel sandstone	0-6,800	<0.01	<10-100	NL
Fort Union aquifer	Fort Union Formation	Coarse-grained sandstone	Very thin	NL	NL	NL
Mesaverde aquifer	Mesaverde Group	sandstone interbedded shale and coal	Averages 3,000	0.0001-1.0	NL	NL
Mancos confining unit	Mancos Shale	mostly shale but Frontier Sandstone may be local aquifer	>7,000	NL	NL	NL
Abbreviations: ft = feet, approx = approximate, avg = average, gpm = gallons per minute, mg = milligrams, L = liters, and NL = not listed.						

Table information from Topper et al. (2003).

The Piceance Creek drainage basins upper and lower aquifers are separated by the semi-confining Mahogany Zone. Information presented in Topper et al. (2003) indicates the following approximate depths to potentiometric surfaces (elevation at which water level would have stood in tightly cased wells, 1985) within hydrogeologic units: upper Piceance basin aquifer 550 feet, lower Piceance basin aquifer 350 feet, and Mesaverde aquifer 250 feet (based on a surface elevation of 7,250 feet). Water well data from the Colorado Division of Water Resources (Topper et al., 2003) indicated that in central Rio Blanco County water wells are uncommon. Based on existing water well data near the project area, total concentration of dissolved constituents in the upper and lower aquifers is generally lower than 1000 milligrams per liter.

Environmental Consequences of the Proposed Action: Surface Water: Clearing, grading, and soil stockpiling activities may temporarily alter overland flow and natural groundwater recharge patterns. Near-surface soil compaction caused by construction equipment and vehicles could reduce the soil's ability to absorb water and could increase surface runoff and the potential for ponding. The magnitude and duration of potential impacts to surface runoff and groundwater recharge would depend on soil depth, soil type, vegetation type and density, slope, aspect, erosive force of rainfall or surface runoff, and duration and extent of construction activities. Impacts would likely be greatest immediately following commencement of construction activities and would likely decrease thereafter due to reclamation activities.

Toxic metals and organic substances associated with fluid mineral development (such as substances found in produced water) that are relatively insoluble in water may be adsorbed on the surface of sediments and transported with sediment to surface waters further deteriorating water quality in stream segments 15 and 16 of the White River Basin. In addition, mechanical means of produced water evaporation may result in overspray which would likely result in increased salt deposits (notably sodium and chlorides). Salt deposition resulting from overspray may adversely impact the health of surrounding vegetation reducing effective ground cover and increasing the potential for soil erosion. In addition, salts deposited from overspray could be carried down gradient to surface waters of the Colorado River system deteriorating water quality.

Ground Water: In the event of any leaks or spills, local ground water may be adversely impacted as runoff could carry contaminates down gradient to alluvial aquifers such as the Piceance Creek alluvium which is situated hydrologically down gradient from the proposed actions. Potential for ground water contamination in bedrock aquifers increases if fractures in confining units are formed. Hydraulic conductivity increases exponentially along fracture zones resulting in rapid transport of fluids/contaminants in these areas. The upper and lower Piceance Basin aquifers have differing water qualities, mixing will degrade water quality in the upper aquifer which is generally of better quality. Storage or surface disposal methods (e.g. evaporation ponds) for produced water would also elevate potential for contaminating ground water of the Upper Piceance Basin Aquifer, and Piceance Creek Alluvial Aquifer.

Environmental Consequences of the No Action Alternative: None

Mitigation: Comply with "Gold Book" fourth edition surface operating standards for all surface disturbing activities (copies of the "Gold Book" fourth edition can be obtained at the WRFO). The operator will restrict non emergency maintenance activities on pipeline ROW and associated access roads when soils become saturated to a depth of three inches or more. The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, Army Corps Section 404 permit coverage, and Industrial Wastewater/Produced Water Permits).

Surface Water: The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. Construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation may be a copy of the Stormwater Discharge Permit or an official verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

The operator will consult with the US Army Corps of Engineers to obtain approval prior to discharging fill material into waters of the US in accordance with Section 404 of the Clean Water Act. Waters of the US are defined in 33 CFR Section 328.3. Written documentation to the BLM

Authorized Officer is required within 45 days of the APD approval date to indicate that the US Army Corps of Engineers has been notified prior to construction or that 404 Permits have been obtained or are not required by the permitting agency. Written documentation may be a copy of the Pre-Construction Notification (PCN) Form or an official verification letter from the US Army Corps of Engineers to the operator stating that a permit has been issued or is not required for the activities in question. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

To mitigate additional soil erosion at the well pad and potential increased sediment and salt loading to nearby surface waters, all disturbed areas affected by drilling or subsequent operations, except areas reasonably needed for production operations, shall be reclaimed as early and as nearly as practicable to their original condition and shall be maintained to control dust an minimize erosion (COGCC). To allow optimal opportunity for interim reclamation of well pads, all tanks and production facilities will be situated on the access road side of the well pad (unless otherwise approved by the WRFO-BLM Area Manager). Reclamation efforts on all pipelines will be final. Interim reclamation of well pads and final reclamation of pipeline right of ways (ROW) will commence as follows:

- Debris and waste materials other than de minimus amounts, including, but not limited to , concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe and cable, as well as equipment associated with the drilling, re-entry or completion operations shall be removed (COGCC).
- Stockpiled topsoil and spoil piles will be separated and clearly labeled to prevent mixing during reclamation efforts.
- Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.
- Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces affected by pipeline/road construction, drilling or subsequent operations, except areas reasonably needed for production operations. Areas on *well pads* not needed for production operations shall be partially reshaped as early and as nearly as practicable to near pre-construction contours. Pipelines will be recontoured to pre-construction contours as soon as construction activities cease.
- The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in recontouring/partial-reshaping efforts.
- Recontoured/partially-reshaped areas will be seeded with a BLM approved seed mixture, and all slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex…) to provide additional protection to topsoil, retain soil moisture, and help promote desired vegetative growth.
- Following seeding and placement of biodegradable fabrics, woody debris cleared during initial construction will be pulled back over the recontoured/partially-reshaped areas to act as flow deflectors and sediment traps. Available woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.
- The operator will be responsible for excluding livestock/wildlife grazing from all reclaimed portions of *well pads*. To eliminate livestock utilization of reclaimed areas prior to successful reclamation, a 4-strand BLM Type-D barbed wire fence with braced

wooden corners will be constructed around all reclaimed portions of the well pad including cut and fill slopes following placement of woody debris (unless otherwise instructed by the BLM).

- The operator will be required to monitor all reclaimed areas for signs of erosion and the presence of noxious and invasive plant species. If problems arise the operator will consult with the BLM for further assistance.
- A bi-annual report showing the operators reclamation schedule and progress will be submitted to the WRFO Area Manager for review.
- It will be the responsibility of the operator to continue revegetation/reclamation efforts until vegetative communities on all disturbed surfaces are composed of desirable seeded vegetation (as determined by the BLM).

Upon final abandonment of well pads, new access roads, and completion of pipelines, 100% of all disturbed surfaces will be restored to pre-construction contours, and revegetated with a BLM preferred seed mixture. Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding) and non-vegetative (straw bails, woody debris, straw waddles, biodegradable fabrics…) techniques. All available woody debris will be pulled back over recontoured areas (woody debris will not account for more that 20% of total surface cover) to help stabilize soils, trap moisture, and provide cover for vegetation. Monitoring and additional reclamation efforts will persist until reclamation is proven successful (as determined by the BLM).

Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Fort Union or Mesaverde Formations will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to valuable surface and ground water resources. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment is suggested to intercept such contaminants prior to infiltrating soils and contaminating ground water. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

Finding on the Public Land Health Standard for water quality: Stream segment 16 of the White River Basin currently meet water quality standards set by the state. Many of the upper tributaries which are ephemeral and flow in direct response to storm events do not meet the standards during periods of flow. Following suggested mitigation measures, water quality in the affected stream segment should continue to meet standards.

WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: There are no wetlands or riparian zones potentially influenced by the proposed or no action alternatives.

Environmental Consequences of the Proposed Action: The proposed action would have no influence on wetland or riparian areas.

Environmental Consequences of the No Action Alternative: There would be no conceivable influence on wetland or riparian areas under the no action alternative.

Mitigation: None

Finding on the Public Land Health Standard for riparian systems: The proposed action and no action alternative would have no conceivable influence on the condition or function of riparian areas or associated habitats and therefore would have no influence on continued maintenance of associated land health standards.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No ACEC's, flood plains, prime and unique farmlands, Wilderness, or Wild and Scenic Rivers, threatened, endangered or sensitive plants exist within the area affected by the proposed action. For threatened, endangered and sensitive plant species Public Land Health Standard is not applicable since neither the proposed nor the no-action alternative would have any influence on populations of, or habitats potentially occupied by, special status plants. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes a finding on Standard 1)

Affected Environment: The following data is a product of an order III soil survey conducted by the Natural Resources Conservation Service (NRCS) in Rio Blanco County, CO. Table 2 highlights important soil characteristics. A complete summary of this information can be found at the White River Field Office.

Table 2:

Soil Number	Soil Name	Slope	Ecological site	Salinity (mmhos/cm^2)	Run Off	Erosion Potential	Bedrock
64	Piceance fine sandy loam	5-15%	Rolling Loam	<2	Medium	Moderate to high	20-40

The proposed action will not encounter any CSU-1 "fragile soils".

64-Piceance fine sandy loam (5 to 15 percent slopes) is a moderately deep, well drained soil found on uplands and broad ridgetops. It formed in eolian material and colluvium derived dominantly from sandstone. The native vegetation is mainly low shrubs, grasses, and a few pinyon trees. Elevation is 6,300 to 7,500 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period

is 80 to 105 days. Typically, the surface layer is brown fine sandy loam 4 inches thick. The upper 5 inches of the subsoil is brown loam, and the lower 13 inches is light yellowish brown loam. The substratum is very pale brown channery loam 8 inches thick. Hard sandstone is at a depth of 30 inches. Depth to sandstone ranges from 20 to 40 inches. Permeability of this Piceance soil is moderate. Available water capacity is moderately low. Effective rooting depth is 20 to 40 inches. Runoff is slow to medium, and the hazard of water erosion is moderate to high.

Environmental Consequences of the Proposed Action: Clearing and grading of well pads, pipeline right of ways and access roads will remove protective vegetative cover from the affected soils accelerating the erosion process. Grading, trenching, and backfilling activities could cause mixing of the soil horizons and could result in reduced soil fertility reducing revegetation potential. Water erosion of soils associated with construction activities will likely result in a net loss of valuable topsoil by sheet, rill, and gully erosion. Eroded topsoil and subsoil may increase salt loading and sedimentation to surface waters down gradient disturbed areas. Increased sedimentation/salt loads could adversely impact water quality and aquatic life.

Any leaks or spills of environmentally unfriendly substances (e.g. diesel fuel) could compromise the productivity of affected soils. Decreased soil productivity will hinder reclamation efforts and leave soils further exposed to erosional processes.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will be responsible for segregating topsoil material and backfilling of topsoil in its respective original position (last out, first in) to assist in the reestablishment of soil health and productivity.

Erosion and sediment control measures will be installed on all slopes exceeding five percent to mitigate soil loss. Erosion and sediment control measures will be maintained until stream banks and adjacent upland areas are stabilized.

All disturbed surfaces will be restored to natural contours and revegetated with a BLM approved seed mixture. Interim reclamation will follow the mitigation outlined in the Water Quality portion of this document.

Finding on the Public Land Health Standard for upland soils: Infiltration and permeability rates will be reduced with increased soil compaction. Following proper mitigation techniques and reclamation procedures, soil health will remain unchanged from current conditions.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The proposed action occurs in a mountain big sagebrush park immediately above the head of Hatch Gulch. This Loamy slopes ecological site is being invaded by pinyon and juniper.

Environmental Consequences of the Proposed Action: Two primary negative impacts will/could occur as a result of access road, pad and pipeline construction; 1) The 7 acres disturbed as a result of pipeline, access road and pad construction will accelerate the rate of plant community fragmentation which is presently occurring in this area of Piceance Basin. This impact is unmitigated in the short term and likely, longer. 2) In terms of plant community composition, structure and function, the principal negative impact over the long term would occur if cheatgrass or noxious weeds are allowed to establish and proliferate on the disturbed areas resulting from pipeline and access road construction. Drilling multiple wells from a single pad, while limiting disturbance and plant community fragmentation over both the short and long term, will not completely mitigate the negative impact of the proposed action upon native plant communities; however, it is far more preferable than the alternative of multiple locations with single bores.

Environmental Consequences of the No Action Alternative: There will be no change in the present situation.

Mitigation: Promptly revegetate all disturbed areas with Native Seed mix #2. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipeline until after seeding operations are completed. Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application.

Seed Mix #	Species (Variety)	Lbs. PLS per Acre	Ecological Sites
2	Western wheatgrass (Rosanna) Indian ricegrass (Nezpar) Bluebunch wheatgrass (Whitmar) Thickspike wheatgrass (Critana) Green needlegrass (Lodorm) Globemallow Alternates: Fourwing saltbush, Utah sweetvetch, balsamroot	2 1 2 2 1 0.5	Deep Loam, Loamy 10"-14", Loamy Breaks, Loamy Slopes, Rolling Loam, Valley Bench

If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): Upland plant communities currently meet the Standard and are expected to continue to under the proposed action.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: There are no aquatic habitats potentially influenced by the proposed or no action alternatives.

Environmental Consequences of the Proposed Action: The proposed action would have no influence on aquatic wildlife or associated habitat.

Environmental Consequences of the No Action Alternative: The no action alternative would have no influence on aquatic wildlife or associated habitat.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): The proposed action and no action alternatives would have no conceivable influence on the condition or function of aquatic wildlife or associated habitats and therefore would have no influence on continued maintenance of associated land health standards.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: This higher elevation sagebrush community is categorized by the Colorado Division of Wildlife as big game general winter range. These habitats are typically occupied from September through early January and again from mid-April through mid-May.

There is no suitable nesting substrate available within the area for woodland nesting species such as sharp-shinned and Cooper's hawk or cliff-nesting species such as golden eagle and red-tailed hawk.

Nongame mammals and birds using this area are typical and widely distributed in extensive like habitats across the Resource Area and northwest Colorado; there are no narrowly endemic or highly specialized species known to inhabit those lands potentially influenced by this action.

Environmental Consequences of the Proposed Action: Effects of this proposed project on wildlife resources, including big game, this 9-well pad would substantially reduce the extent and distribution of forage and cover resources dedicated to access roads, pipelines, and pads associated with the alternate development of 9 separate well pads and would reduce the cumulative effects of increasing road density and the expansion of industrial and recreational activity on these winter and spring ranges. The long-term occupation of about 5.5 acres of foraging area (pad and road) and temporary reductions in woody overstory on about 1.5 acres for the pipeline would have minor localized influence on big game forage availability, but these reductions have cumulative connotations. Final pipeline reclamation, vehicle deterrents (see below), and interim reclamation on the well pad would help offset herbaceous forage losses and accelerate the reestablishment of woody forage and cover components.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would potentially influence big game and non-game species or their associated habitats.

Mitigation: The use of interim reclamation techniques will be used to the extent practicable on the pad such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., where access road enters pad), and 3) all disturbed areas are reseeded and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads and trial application on the roadbeds themselves).

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): This project, as mitigated, would not jeopardize the viability of any animal population. It would have no measurable consequence on terrestrial habitat condition, utility, or function, nor have any discernible effect on animal abundance or distribution at any landscape scale. The public land health standard would thus be met.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management	X		
Forest Management	X		
Geology and Minerals			X
Hydrology/Water Rights			X
Law Enforcement		X	
Noise		X	
Paleontology			X
Rangeland Management			X
Realty Authorizations		X	
Recreation			X
Socio-Economics		X	
Visual Resources			X
Wild Horses	X		

ACCESS AND TRANSPORTATION

Affected Environment: The proposed action is in an location adjacent to Rio Blanco County road 76 and where motorized travel is open to cross country travel from May 1 through October 15 of each year and is limited to existing routes the remainder of the year.

Environmental Consequences of the Proposed Action: It is likely that traffic on RBC 76 will increase leading to potential road surface degradation.

Environmental Consequences of the No Action Alternative: None.

Mitigation: New 150 feet of road will be maintained to Gold Book standard by lessee.

GEOLOGY AND MINERALS

Affected Environment: The surface geologic formation of the well locations is Uinta and ExxonMobil's targeted zone is in the Mesaverde. During drilling potential water, oil shale, sodium, and gas zones will be encountered from surface to the targeted zone. Aquifers that will be encountered during drilling are the Perched in the Uinta, the A-groove, B-groove and the Dissolution Surface in the Green River formation. These aquifer zones along with the Wasatch formation are known for difficulties in drilling and cementing. Oil shale and sodium resources are located in the Green River formation. The bottom hole locations for A1, A2, A3 and A9 are located on Federal Oil and Gas Lease COD-052141; A4 is located on COD-052127; A5, A6, and A8 are located on COD-052129; and A7 is located on COD-052131. All are within the Piceance Creek Unit COC-47666X

Environmental Consequences of the Proposed Action: The cementing procedure of the proposed actions isolates the formations and will prevent the migration of gas, water, and oil between formations. This includes oil shale and coal zones. However, conventional recovery of the coals is not considered feasible at the depths that are encountered in the well. Development of this well will deplete the natural gas resources in the targeted formation

Environmental Consequences of the No Action Alternative: The natural gas resources in the targeted zone would not be recovered at this time.

Mitigation: None

HYDROLOGY AND WATER RIGHTS

Affected Environment: The proposed action is located in the Lower Piceance Creek Fifth level watershed. Stream flows in Piceance Creek and its tributaries generally peak in mid spring as a result of high elevation snowmelt and periodically during late summer and early fall in response to high intensity precipitation events. Approximately eighty percent of annual flows in Piceance Creek originates as discharge from alluvial and bedrock aquifers (Tobin, 1987). Ephemeral drainages flow only in direct response to snowmelt and intense summer and early autumn storms. Stream flows in Piceance Creek and its tributaries generally peak in mid spring as a result of high elevation snowmelt and periodically during late summer and early fall in response to high intensity precipitation events. Approximately eighty percent of annual flows in Piceance Creek originates as discharge from alluvial and bedrock aquifers (Tobin, 1987).

Ephemeral drainages flow only in direct response to snowmelt and intense summer and early autumn storms.

Approximately 98% of the precipitation in the Piceance Basin is lost to evapotranspiration. The remaining water runs off rapidly and replenishes stream flow or recharges bedrock and alluvial aquifers. Ground water recharge areas generally are located in higher parts of the drainage basin. The recharge moves slowly laterally and downward into the upper aquifer system, passes through the Mahogany zone (leaky confining unit) and enters the lower aquifer system through fractures and solution openings. The water in the upper and lower aquifers moves horizontally through the basin to the discharge areas. In the Piceance drainage basin, the water eventually moves upward back through the aquifer system where it discharges into the valley-fill alluvial aquifer or emerges as springs in the stream valleys (Taylor 1987). No BLM springs have been identified within 0.5 miles of any surface disturbing activities associated with the proposed actions.

The stream banks of Piceance Creek are generally composed of sand, silt, and clay particles that are less than about one-tenth of an inch in diameter. The bank materials erode easily when stream discharge increases during peak flow conditions. Bank erosion is probably most prominent during the spring snowmelt when high flows persist for several days. The bank material absorbs a large amount of water, becomes soft and easily removable, and sloughs into the stream in large clumps. The stream bed of Piceance Creek is composed of silt, sand, gravel, and occasional cobbles, with pockets of fine material where the velocity of the stream generally is slow. Coarse streambed materials normally move only under peak flow conditions (Norman 1987).

Environmental Consequences of the Proposed Action: Improper drainage from well pads, access roads, and pipeline rights of ways will elevate sediment production from disturbed areas. Increased sediment loads to local surface water drainages will result in a sediment rich system. Sediment rich systems are characterized by deposition and high width to depth ratios (W/D ratio) (wide shallow channels). As the W/D ratio increases, the hydraulic stress against the banks also increases and bank erosion is accelerated. Increases in the sediment supply to the channel develop from bank erosion, reducing the systems capability to transport sediment. As a result, deposition occurs, further accelerating bank erosion, and the cycle continues (Rosgen, 1996).

Construction activities may disrupt natural surface and ground water flow patterns. Altered flow patterns could disrupt natural surface and ground water recharge/discharge patterns. Changes to natural recharge/discharge patterns could have adverse impacts on stream channel morphology, productivity of alluvial wells, riparian areas and aquatic life.

Fracturing techniques in production formations may result in greater communication between over/underlying geologic formations. Increased communication between different geologic formations may impact head characteristics in the affected formations. However, fracturing will occur well below the aquifers and no impacts to the hydrology of bedrock aquifers or water rights should occur if surface and intermediate casings are properly cemented to isolate the aquifers.

Environmental Consequences of the No Action Alternative: None

Mitigation: Refer to mitigation in the Water Quality portion of this document.

PALEONTOLOGY

Affected Environment: The proposed PCU 296-7 well pad, access road and well tie pipeline: the proposed well pad, access road and well tie pipeline is located in an area generally mapped as the Uinta Formation (Tweto 1979) which the BLM, WRFO has classified as a Condition I formation meaning it is known to produce scientifically important fossil resources.

Environmental Consequences of the Proposed Action: If it becomes necessary, at any time, to excavate into the underlying rock to construct the access road, level the well pad, excavate the reserve/blooie pit or bury the well tie pipeline there is a potential to impact scientifically important fossil resources.

Environmental Consequences of the No Action Alternative: There would be no new impacts to fossil resources under the No Action Alternative

Mitigation: 1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. If it becomes necessary, at any time, to excavate into the underlying rock to construct the access road, level the well pad, excavate the reserve/blooie pit or bury the well tie pipeline a paleontological monitor shall be present before any such excavation is initiated.

RANGELAND MANAGEMENT

Affected Environment: The proposed well location access road and pipeline is within the Burke Brothers use area of the Little Hills (06006) allotment. Their permitted use is as follows:

Allotment		Permit Number	Livestock		Period of Use	Percent Public Land	Authorized Use (AUM)
06006	Little Hills-	051405	50	C	04/15-04/30	100	26
	Burke Brothers	051405	110	C	05/01-10/30	100	662
			5	H	05/01-10/30	100	30
			98	C	05/01-10/30	100	590
			100	C	05/01-10/30	100	602
			145	C	12/01-12/31	100	148

Environmental Consequences of the Proposed Action: The proposed action will result in the long term loss of 1 AUM of livestock forage and an additional 2 AUMs of forage due to dust damage to vegetation.

Environmental Consequences of the No Action Alternative: There will be no change from the present situation.

Mitigation: No additional mitigation necessary.

REALTY AUTHORIZATIONS

Affected Environment: All of the proposed wells are located entirely within the Piceance Creek Unit; therefore, no rights-of-way will be needed.

Environmental Consequences of the Proposed Action: None

Environmental Consequences of the No Action Alternative: None

Mitigation: None

RECREATION

Affected Environment: The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

The project area has been delineated a Recreation Opportunity Spectrum (ROS) class of Roaded Natural (RN). RN physical and social recreation setting may have modifications which range from being easily noticed to strongly dominant to observers within the area. However, from sensitive travel routes and use areas these alterations would remain unnoticed or visually subordinate. There is strong evidence of designed roads and/or highways. Structures are generally scattered, remaining visually subordinate or unnoticed to the sensitive travel route observer. Structures may include utility corridors, microwave installations and so on. Frequency

of contact is moderate to high on roads and low to moderate on trails and away from roads. RN recreation experience is characterized by a moderate probability of isolation from the sights and sounds of humans that offers an environment that offers challenge and risk.

Environmental Consequences of the Proposed Action: The public will lose approximately 7 acres of dispersed recreation potential while wells are in operation. The public will most likely not recreate in the vicinity of these facilities and will be dispersed elsewhere. If action coincides with hunting seasons (September through November) it will most likely disrupt the experience sought by those recreationists.

With the introduction of new well pads and roads, an increase of traffic could be expected increasing the likihood of human interactions, the sights and sounds associated with the human environment and a less naturally appearing environment.

Environmental Consequences of the No Action Alternative: No loss of dispersed recreation potential and no impact to hunting recreationists.

Mitigation: None.

VISUAL RESOURCES

Affected Environment: The proposed action would be located in an area with a VRM III classification. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Environmental Consequences of the Proposed Action: The proposed action would not be visible to a casual observer traveling on RBC 5 (Piceance Creek Road), which would be the closest paved route that would be utilized. The proposed action would be visible from RBC 76, but due to the close proximity of existing compressor stations and well pads in the area, the proposed action would not dominate the view. By painting all production facilities juniper green to mimic the vegetation in the distant backdrop to repeat the basic elements of color and form, the level of change to the characteristic landscape would be less than moderate, and the objectives of the VRM III classification would be retained.

Environmental Consequences of the No Action Alternative: There would be no environmental impacts.

Mitigation: All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

CUMULATIVE IMPACTS SUMMARY: Cumulative impacts from oil and gas development were analyzed in the White River Resource Area PRMP/FEIS. Current development, including the actions proposed in this EA, has not exceeded the foreseeable development analyzed in the PRMP/FEIS.

REFERENCES CITED:

Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Commission (WQCC), 2005a. Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin. Amended December 12, 2005 and Effective March 2, 2006.

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Colorado Oil and Gas Conservation Commission (COGCC). Reclamation Regulations. Accesses online at http://oil-gas.state.co.us/RR_Asps/1000-ser.pdf. Accessed July 2006.

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2005 Exxon-Mobil Corporation's Nine Proposed Gas Well Locations and a proposed Water Line, Class III Cultural Resource Inventory, Rio Blanco County, Colorado. Metcalf Archaeological Consultants, Inc., Eagle, Colorado.

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1979 Geologic Map of Colorado. United States Geologic Survey, Department of the Interior, Reston, Virginia.

PERSONS / AGENCIES CONSULTED: None

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Nate Dieterich	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources Paleontological Resources
Mark Hafkenschiel	Rangeland Management Specialist	Invasive, Non-Native Species, Vegetation, Rangeland Management
Lisa Belmonte	Wildlife Biologist	Migratory Birds
Lisa Belmonte	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species, Wildlife
Melissa J. Kindall	Hazmat Collateral	Wastes, Hazardous or Solid
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Lisa Belmonte	Wildlife Biologist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Nate Dieterich	Hydrologist	Soils
Lisa Belmonte	Wildlife Biologist	Wildlife Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Penny Brown	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Keith Whitaker	Natural Resource Specialist	Visual Resources
Melissa J. Kindall	Range Technician	Wild Horses

Finding of No Significant Impact/Decision Record (FONSI/DR)

CO-110-2006-172-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

DECISION/RATIONALE: It is my decision to approve the proposed action with the addition of the mitigation measures listed below.

MITIGATION MEASURES:

1. The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust) from associated access roads, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing access roads with gravels will also help mitigate production of fugitive particulate matter. Land clearing, grading, earth moving or excavation activities will be suspended when wind speeds exceed a sustained velocity of 20 miles per hour. Disturbed areas will be restored to original contours, and revegetated with a BLM preferred seed mixture. Following seeding, woody debris cleared from the ROW will be pulled back over the pipeline to increase effective ground cover and help retain soil moisture.

2. Construction equipment will be maintained in good operating condition to ensure that engines are running efficiently. Vehicles and construction equipment with emission controls will also be maintained to ensure effective pollutant emission reductions.

3. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:
    - whether the materials appear eligible for the National Register of Historic Places

- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

4. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

5. The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

6. Promptly revegetate all disturbed areas with Native Seed mix #2 below. Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application.

SPECIES (VARIETY)	LBS. PLS/ACRE
Western wheatgrass (Rosanna)	2
Indian ricegrass (Nezpar)	1
Bluebunch wheatgrass (Whitmar)	2
Thickspike wheatgrass (Critana)	2
Green needlegrass (Lodorm)	1
Globemallow	0.5

7. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipeline until after seeding operations are completed.

8. If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities.

9. It is recommended that earthwork associated with this project be conducted outside the migratory bird nesting season (late-May through mid-July).

10. It will be the responsibility of the operator to effectively preclude migratory bird access to, or contact with, reserve pit contents that possess toxic properties (i.e., through ingestion or exposure) or have potential to compromise the water-repellent properties of birds' plumage. Exclusion methods may include netting, the use of "bird-balls", or other alternative methods that effectively eliminate migratory bird contact with pit contents and meet BLM's approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to eliminate migratory bird use two weeks prior to initiation of drilling activities. The BLM-approved method will be applied whenever such pits contain fluids other than fresh water. All lethal and non-lethal events that involve migratory birds will be reported to a White River Field Office Petroleum Engineer Technician immediately.

11. Disturbed areas would be seeded with a mix designed to reestablish sagebrush and forb species.

12. Sagebrush seed would be collected from local populations of appropriate species. Distribution would be dependent upon range site (i.e., *Artemisia tridentata* spp. *Vaseyana* and spp. *wyomingensis*). A mosaic of sagebrush seeded and unseeded areas are recommended. Reclamation on these sites should use seed mixes and seeding methods that include and promote successful establishment of a full complement of grasses and favored native forbs. The following forbs would be included in reclamation seed mixes as appropriate throughout sage-grouse range on lands administered by the BLM WRFO and it is recommended that these components be applied to fee-lands under ExxonMobil's control or lease: 1) scarlet globemallow, 2) Utah sweetvetch, 3) arrowleaf balsamroot, 4) Lewis flax, and 5) Rocky Mountain penstemon.

13. Additional vegetation treatment to enhance sage-grouse habitat would be negotiated between the BLM, CDOW, and ExxonMobil. Long-term modification of suitable sage-grouse habitat would be minimized through the use of interim reclamation as directed by BLM.

14. The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

15. Comply with "Gold Book" fourth edition surface operating standards for pipeline constructing (copies of the "Gold Book" fourth edition can be obtained at the WRFO). The operator will restrict non emergency maintenance activities on pipeline ROW and associated access roads when soils become saturated to a depth of three inches or more. The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, Army Corps Section 404 permit coverage, and Industrial Wastewater/Produced Water Permits).

16. Surface Water: The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. Construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation may be a copy of the Stormwater Discharge Permit or an official

verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

17. The operator will consult with the US Army Corps of Engineers to obtain approval prior to discharging fill material into waters of the US in accordance with Section 404 of the Clean Water Act. Waters of the US are defined in 33 CFR Section 328.3. Written documentation to the BLM Authorized Officer is required within 45 days of the APD approval date to indicate that the US Army Corps of Engineers has been notified prior to construction or that 404 Permits have been obtained or are not required by the permitting agency. Written documentation may be a copy of the Pre-Construction Notification (PCN) Form or an official verification letter from the US Army Corps of Engineers to the operator stating that a permit has been issued or is not required for the activities in question. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

18. To mitigate additional soil erosion at the well pad and potential increased sediment and salt loading to nearby surface waters, all disturbed areas affected by drilling or subsequent operations, except areas reasonably needed for production operations, shall be reclaimed as early and as nearly as practicable to their original condition and shall be maintained to control dust an minimize erosion (COGCC). To allow optimal opportunity for interim reclamation of well pads, all tanks and production facilities will be situated on the access road side of the well pad (unless otherwise approved by the WRFO-BLM Area Manager). Reclamation efforts on all pipelines will be final. Interim reclamation of well pads and final reclamation of pipeline right of ways (ROW) will commence as follows:
    - Debris and waste materials other than de minimus amounts, including, but not limited to , concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe and cable, as well as equipment associated with the drilling, re-entry or completion operations shall be removed (COGCC).
    - Stockpiled topsoil and spoil piles will be separated and clearly labeled to prevent mixing during reclamation efforts.
    - Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.
    - Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces affected by pipeline/road construction, drilling or subsequent operations, except areas reasonably needed for production operations. Areas on *well pads* not needed for production operations shall be partially reshaped as early and as nearly as practicable to near pre-construction contours. Pipelines will be recontoured to pre-construction contours as soon as construction activities cease.
    - The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in recontouring/partial-reshaping efforts.
    - Recontoured/partially-reshaped areas will be seeded with a BLM approved seed mixture, and all slopes exceeding 5 % will be covered with wildlife friendly

biodegradable fabrics (such as but not limited to Jute blankets, Curlex…) to provide additional protection to topsoil, retain soil moisture, and help promote desired vegetative growth.

- Following seeding and placement of biodegradable fabrics, woody debris cleared during initial construction will be pulled back over the recontoured/partially-reshaped areas to act as flow deflectors and sediment traps. Available woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.
- The operator will be responsible for excluding livestock/wildlife grazing from all reclaimed portions of *well pads*. To eliminate livestock utilization of reclaimed areas prior to successful reclamation, a 4-strand BLM Type-D barbed wire fence with braced wooden corners will be constructed around all reclaimed portions of the well pad including cut and fill slopes following placement of woody debris (unless otherwise instructed by the BLM).
- The operator will be required to monitor all reclaimed areas for signs of erosion and the presence of noxious and invasive plant species. If problems arise the operator will consult with the BLM for further assistance.
- A bi-annual report showing the operators reclamation schedule and progress will be submitted to the WRFO Area Manager for review.
- It will be the responsibility of the operator to continue revegetation/reclamation efforts until vegetative communities on all disturbed surfaces are composed of desirable seeded vegetation (as determined by the BLM).

19. Upon final abandonment of well pads, new access roads, and completion of pipelines, 100% of all disturbed surfaces will be restored to pre-construction contours, and revegetated with a BLM preferred seed mixture. Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding) and non-vegetative (straw bails, woody debris, straw waddles, biodegradable fabrics…) techniques. All available woody debris will be pulled back over recontoured areas (woody debris will not account for more that 20% of total surface cover) to help stabilize soils, trap moisture, and provide cover for vegetation. Monitoring and additional reclamation efforts will persist until reclamation is proven successful (as determined by the BLM).

20. Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Fort Union or Mesaverde Formations will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to valuable surface and ground water resources. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment is suggested to intercept such contaminants prior to infiltrating soils and contaminating ground water. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

21. The operator will be responsible for segregating topsoil material and backfilling of topsoil in its respective original position (last out, first in) to assist in the reestablishment of soil health and productivity.

22. Erosion and sediment control measures will be installed on all slopes exceeding five percent to mitigate soil loss. Erosion and sediment control measures will be maintained until stream banks and adjacent upland areas are stabilized.

23. The use of interim reclamation techniques will be used to the extent practicable on the pad such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., where access road enters pad), and 3) all disturbed areas are reseeded and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads and trial application on the roadbeds themselves).

24. The new 150 foot of road will be maintained to Gold Book standard by lessee.

25. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:
    - whether the materials appear to be of noteworthy scientific interest
    - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

    If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

26. If it becomes necessary, at any time, to excavate into the underlying rock to construct the access road, level the well pad, excavate the reserve/blooie pit or bury the well tie pipeline a paleontological monitor shall be present before any such excavation is initiated.

27. All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

COMPLIANCE/MONITORING: Will be conducted by the Inspection and Enforcement (I & E) staff on regularly scheduled intervals.

NAME OF PREPARER: Keith Whitaker

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL: Marvin L. Henderson for Kent Ca
Field Manager

DATE SIGNED: 8/23/06

ATTACHMENTS: General location of the Proposed Action.

CO-110-2006-172-EA 33

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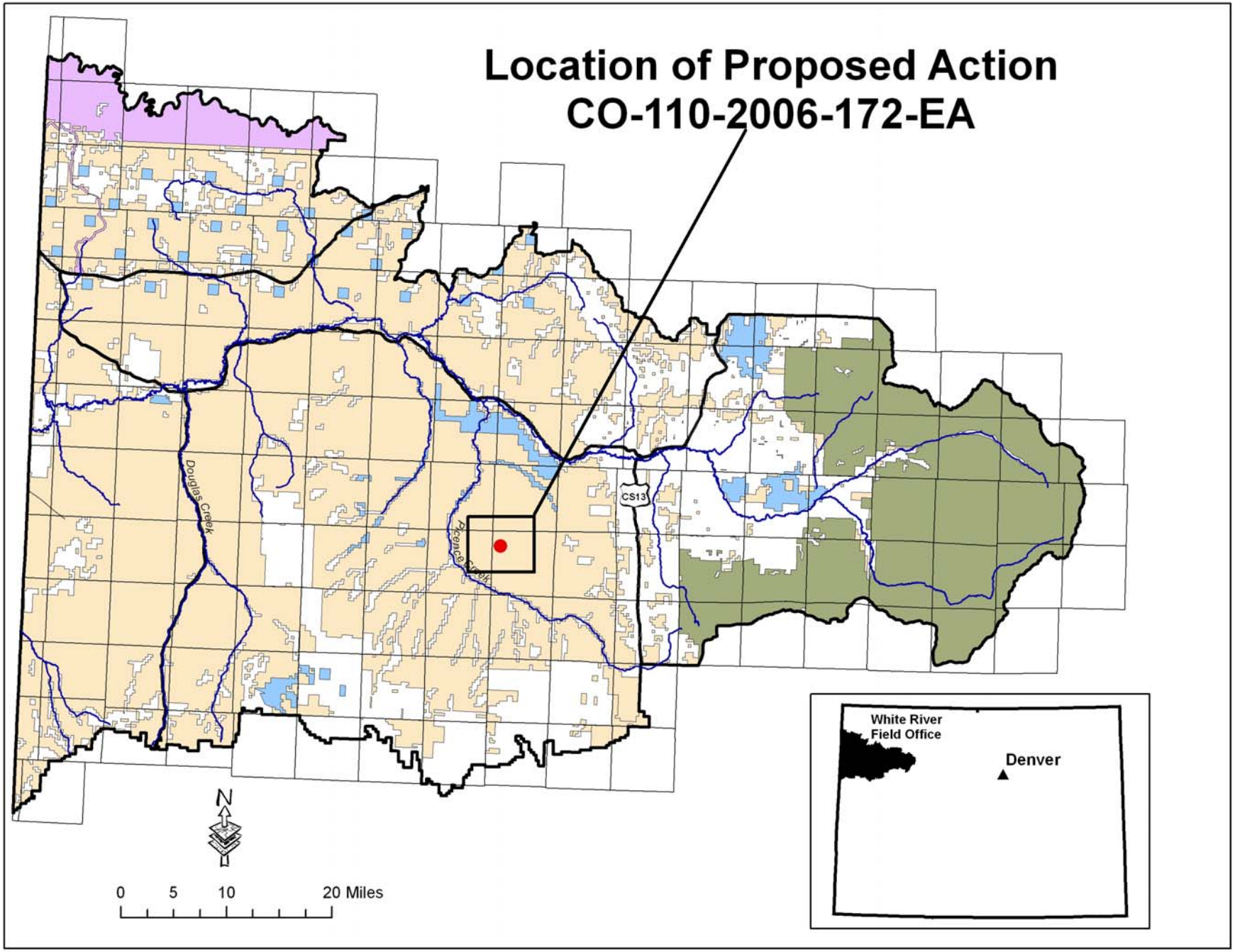
Location of Proposed Action
CO-110-2006-172-EA
Douglas Creek
Piceance Creek
CS13
N
0 5 10 20 Miles
White River
Field Office
Denver